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KENYON & KENYON LLP ONE BROADWAY NEW YORK, NY 10004			EXAMINER YAMNITZKY, MARIE ROSE	
			ART UNIT 1774	PAPER NUMBER

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Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/785,287

**Applicant(s)**

THOMPSON ET AL.

**Examiner**

Marie R. Yamnitzky

**Art Unit**

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) 1-50 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 51-53 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date See Continuation Sheet.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :rec'd 22 Apr 2004, 12 Oct 2004, 10 Dec 2004 and 04 Apr 2005.

1. Applicant's election without traverse of Group II, drawn to a compound, in the reply filed on September 26, 2006, is acknowledged. Claims 51-53 read on the elected invention.

Claims 1-50 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made **without** traverse in the reply filed on September 26, 2006.

2. Claims 51-53 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear if the terminology of "having the structure" (claim 51) and "has the structure" (claim 53) is to be interpreted as open or closed. For example, it is not clear if a compound that has the structure shown in claim 53 may have further substituents.

It is not clear if "phenyl" as recited in claim 52 is limited to unsubstituted phenyl.

There is no antecedent basis for "the aromatic hydrocarbon material" as recited in claim 53.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 51 and 52 are rejected under 35 U.S.C. 102(b) as being anticipated by Xie et al. (US 5,989,737).

Compound (14) of the formula shown in column 9 of the patent to Xie et al. is a compound within the scope of present claims 51 and 52 wherein one of  $R_{11}$ ,  $R_{12}$  and  $R_{13}$  represents di-substitution and the other two represent mono-substitution, and each substituent is an aryl, specifically, a phenyl.

5. Claim 51 is rejected under 35 U.S.C. 102(b) as being anticipated by Mori et al. (US 5,281,489) or Tamano et al. (US 6,150,042) or Tsuboyama et al. (US 2002/0038860 A1) or Ishikawa et al. (US 2002/0064679 A1) or Suzuki et al. (US 2002/0177009 A1).

Mori et al. teach triphenylene at column 23, line 60. Triphenylene is a compound within the scope of present claim 51 wherein each of  $R_{11}$ ,  $R_{12}$  and  $R_{13}$  represents no substitution.

Tamano et al. disclose several compounds within the scope of present claim 51 wherein each of  $R_{11}$ ,  $R_{12}$  and  $R_{13}$  represents di-substitution, and each substituent is a heteroalkyl group. For example, see compounds 22-29 and 45-52 of the formulae shown in columns 21-24 and 37-40.

Tsuboyama et al. disclose several compounds within the scope of present claim 51 wherein each of  $R_{11}$ ,  $R_{12}$  and  $R_{13}$  represents di-substitution, and each substituent is a heteroalkyl group. For example, see LC compounds 1-5 in paragraph [0031].

Ishikawa et al. disclose compounds within the scope of present claim 51 wherein two of  $R_{11}$ ,  $R_{12}$  and  $R_{13}$  represents mono-substitution and the other one represents no substitution, and each substituent is an alkenyl group. Ishikawa et al. also disclose compounds within the scope of

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present claim 51 wherein each of  $R_{11}$ ,  $R_{12}$  and  $R_{13}$  represents mono-substitution, and each substituent is an alkenyl group. See compounds (15)-(18) of the formulae shown on pages 10 and 11.

Suzuki et al. disclose compounds within the scope of present claim 51 wherein one of  $R_{11}$ ,  $R_{12}$  and  $R_{13}$  represents mono-substitution and the other two represent no substitution, and the substituent is an aryl or substituted aryl group. See compounds 21 and 56 of the formulae shown on pages 12 and 27.

6. Claims 51-53 are rejected under 35 U.S.C. 102(b) as being anticipated by Boden et al. in *Liquid Crystals*, 28(1), pp. 139-144 (2001) or Wegewijs et al. in *Physical Review B*, Vol. 65, pp. 245112-1-245112-8 (2002).

Boden et al. disclose compounds within the scope of present claims 51-53 wherein each of  $R_{11}$ ,  $R_{12}$  and  $R_{13}$  represents di-substitution, and each substituent is a substituted aryl group (specifically, a substituted phenyl group). Boden et al. also disclose compounds within the scope of present claims 51-53 wherein two of  $R_{11}$ ,  $R_{12}$  and  $R_{13}$  represents di-substitution and the other represents mono-substitution, and each substituent is a substituted aryl group (specifically, a substituted phenyl group). See formulae 2 and 3 in Figure 1 on page 140.

Wegewijs et al. disclose compounds within the scope of present claims 51-53 wherein each of  $R_{11}$ ,  $R_{12}$  and  $R_{13}$  represents di-substitution, and each substituent is a substituted aryl group (specifically, a substituted phenyl group). Wegewijs et al. also disclose compounds within

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the scope of present claim 51 wherein each of  $R_{11}$ ,  $R_{12}$  and  $R_{13}$  represents di-substitution, and each substituent is a heteroalkyl group. See Fig. 1 on page 245112-2.

Claim 52 is included in this rejection subject to clarification as to whether “phenyl” is limited to unsubstituted phenyl.

Claim 53 is included in this rejection subject to clarification as to whether the phrase “has the structure” is closed language.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 51-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishiskawa et al. (US 2002/0064679 A1) or Jarikov (US 2004/0076853 A1).

Ishiskawa's general formula [1] as defined in paragraph [0012] provides for various compounds within the scope of present claim 51. Each of the R variables in general formula [1] is independently selected from hydrogen or various possible substituents such as alkyl, alkenyl, substituted or unsubstituted aromatic hydrocarbon (i.e. aryl), or heteroalkyl (such as alkoxy) groups.

Jarikov's formula (r) as defined in paragraph [1452] provides for various compounds within the scope of present claim 51. Each of the R variables in formula [r] is independently

selected from hydrogen or various possible substituents such as alkyl, alkenyl, alkynyl, substituted or unsubstituted aryl, or heteroalkyl (such as alkoxy) groups.

With respect to present claims 52 and 53, a phenyl group is taught for the aromatic hydrocarbon group of Ishikawa's compounds (see paragraph [0033]), and one of ordinary skill in the art at the time of the invention would have at once envisaged a phenyl group for an aryl group of from 5 to 30 carbon atoms as taught in paragraph [1452] of Jarikov's publication.

It would have been obvious to one of ordinary skill in the art at the time of the invention to make various compounds within the scope of Ishikawa's general formula [1] or Jarikov's formula (r) in order to provide various compounds suitable for the purposes of the prior art. One of ordinary skill in the art at the time of the invention would have reasonably expected that various substituted triphenylene compounds having substituents taught by the prior art would be suitable for the purposes of the prior art.

9. The reference made of record and not relied upon is considered pertinent to applicant's disclosure.

Ikeda et al. (US 2006/0134456 A1) disclose the compound represented by the formula set forth in present claim 53. See CH26 on page 5. Ikeda's related PCT application was published February 26, 2004, and was not published in English. Neither Ikeda's U.S. publication nor the related PCT publication is available as prior art.



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10. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (571) 272-1531. The examiner works a flexible schedule but can generally be reached at this number from 7:00 a.m. to 3:30 p.m. Monday-Friday.

The current fax number for all official faxes is (571) 273-8300. (Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (571) 273-1531.)

MRY  
December 04, 2006



MARIE YAMNITZKY  
PRIMARY EXAMINER

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